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AMENDMENT

S I R:

Pursuant to the filing of a Request for Continued Examination (RCE) and in response to the Final Office Action dated March 8, 2007, please amend the above-caption application without prejudice as follows.

Amendments to the Claims are reflected in the listing of claims, which begins on page 2 of this paper.

Remarks begin on page 6 of this paper.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in this application:

LISTING OF CLAIMS:

1. (Currently Amended) A brush seal for sealing a rotor with respect to a stator, comprising:

bristles including free ends oriented toward a first one of the rotor and the stator;

a bristle housing, the bristles fastened in the bristle housing, the bristle housing press-fit in an axial space between a fastening element and a ~~first~~ second one of the rotor and the stator, the bristle housing press-fit on the ~~first~~ second one of the rotor and the stator against movement in a radial direction relative to the ~~first~~ second one of the rotor and the stator, the bristle housing including

a cover plate having an outer side surface arranged on a first axial side of the bristles and an axial section that extends axially from the outer side surface in an axial direction away from the bristles to a free end,

a supporting plate~~,~~ having an inner side surface arranged on a second axial side of the bristles opposite the first axial side, and a circumferential section that extends from the inner side surface in the axial direction from the second axial side of the bristles to the first axial side of the bristles and axially beyond the free end of the cover plate to a flanged section, the flanged section projecting radially inwardly beyond the free end of the cover plate so as to form an undercut between the flanged section, the free end, and the outer side surface, the bristles being fastened in the bristle housing between the inner side surface and the outer side surface;

~~a circumferential surface and two side surfaces;~~

~~bristles fastened in the bristle housing, the bristles including free ends oriented toward a second one of the rotor and the stator;~~

~~a first positioning arrangement~~ an integral projection provided on ~~at least one of the circumferential section and at least one side surface~~ the supporting plate; and

a ~~second positioning arrangement~~ recess provided on one of the rotor, the stator and the fastening element;

wherein the ~~first positioning arrangement~~ integral projection and the ~~second positioning arrangement~~ recess are configured to interact with each other in a positive-locking manner to maintain the press-fit against movement in a radial direction and to provide definite positioning of the bristle housing so as to prevent relative rotation and reversed mounting of the entire bristle housing.

Claim 2. (Canceled).

3. (Original) The brush seal according to claim 1, wherein at least one of the cover plate and the supporting plate is formed by non-cutting shaping.

4. (Original) The brush seal according to claim 3, wherein the non-cutting shaping includes deep drawing.

5. (Original) The brush seal according to claim 1, wherein the bristle housing is formed by flanging the cover plate and the supporting plate.

Claims 6 and 7. (Canceled).

8. (Currently Amended) The brush seal according to claim [[7]] 1, wherein the integral projection is formed during non-cutting shaping of ~~at least one of the cover plate and~~ the supporting plate.

9. (Currently Amended) [[A]] The brush seal according to claim 1, ~~for sealing a rotor with respect to a stator, comprising:~~

~~a bristle housing press-fit in an axial space between a fastening element and a first one of the rotor and the stator, the bristle housing press-fit on the first one of the rotor and the stator against movement in a radial direction relative to the first one of the rotor and the stator, the bristle housing including a cover plate, a supporting plate, a circumferential surface and two side surfaces;~~

~~bristles fastened in the bristle housing, the bristles including free ends oriented toward a second one of the rotor and the stator;~~

~~a first positioning arrangement provided on at least one of the circumferential section and at least one side surface; and~~

~~a second positioning arrangement provided on one of the rotor, the stator and the fastening element;~~

~~wherein the first positioning arrangement and the second positioning arrangement are configured to interact with each other in a positive-locking manner to maintain the press-fit against movement in a radial direction and to provide definite positioning of the bristle housing so as to prevent relative rotation and reversed mounting of the entire bristle housing, and~~ wherein the ~~first positioning arrangement includes at least one~~ integral projection ~~that projects beyond at least one side surface, wherein the projection~~ is one of lenticular and conical~~, the second positioning arrangement including a recess formed in one of the stator, the rotor and the fastening element, the at least one integral projection being engageable in the recess~~.

Claims 10 and 11. (Canceled).

12. (Currently Amended) The brush seal according to claim ~~10~~ 1, ~~the first positioning arrangement and the second positioning arrangement includes~~ further including at least one pair of holes arranged in alignment in the ~~first~~ second one of the stator and rotor, the axial section and the ~~flange~~ circumferential section, the at least one pair of holes being configured to receive a fastener.

13. (Original) The brush seal according to claim 12, wherein the fastener includes at least one of a rivet and a bolt.

14. (Original) The brush seal according to claim 1, wherein the bristles are arranged at an angle of 40° to 50° to a radial direction.

Claims 15 and 16. (Canceled).

17. (New) A brush seal for sealing a rotor with respect to a stator, comprising:

bristles including free ends oriented toward a first one of the rotor and the stator;

a bristle housing, the bristles fastened in the bristle housing, the bristle housing press-fit in an axial space between a fastening element and a second one of the rotor and the stator, the bristle housing press-fit on the second one of the rotor and the stator against movement in a radial direction relative to the second one of the rotor and the stator, the bristle housing including

a cover plate having an outer side surface arranged on a first axial side of the bristles and an axial section that extends axially from the outer side surface in an axial direction away from the bristles to a free end,

a supporting plate having an inner side surface arranged on a second axial side of the bristles opposite the first axial side, and a circumferential section that extends from the inner side surface in the axial direction from the second axial side of the bristles to the first axial side of the bristles and axially beyond the free end of the cover plate to a flanged section, the flanged section projecting radially inwardly beyond the free end of the cover plate so as to form an undercut between the flanged section, the free end, and the outer side surface, the bristles being fastened in the bristle housing between the inner side surface and the outer side surface;

a weld spot projecting radially outwardly from the circumferential section; and

a recess provided on the second one of the rotor and the stator;

wherein the weld spot and the recess are configured to interact with each other in a positive-locking manner to provide definite positioning of the bristle housing so as to prevent relative rotation and reversed mounting of the entire bristle housing.

REMARKS

I. Introduction

With the addition of new claim 17 and the cancellation herein without prejudice of claims 2, 6, 7, 10, 11, 15, and 16, claims 1, 3 to 5, 8, 9, 12 to 14, and 17 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable.

II. Telephone Interview

A telephone interview was conducted on August 23, 2007 between Applicants' representative, Clifford A. Ulrich (Reg. No. 42,194), and Examiner David Reese.

Applicants note with appreciation the courtesies extended by Examiner Reese during the course of the interview.

During the interview, no exhibit was shown and no demonstration was conducted.

During the interview, claim 1 was generally discussed.

During the interview, PCT International Published Patent Application No. WO 98/53229 ("Werner et al.") and U.S. Patent No. 5,474,305 ("Flower") were discussed.

During the interview, the general thrust of the principal arguments made by Applicants is that proposed amendments to claim 1, directed to an undercut feature generally illustrated, for example, at Figure 4 are not disclosed or suggested by the references of record, including Werner et al. and Flower.

During the interview, proposed amendments to claim 1 to further distinguish the claims over Werner et al. and Flower were generally discussed.

The outcome of the interview was that no agreement was reached.

In this regard, amendments to the claims are made herein as indicated during the interview.

III. Rejection of Claims 1 to 5, 7 to 13, 15, and 16 Under 35 U.S.C. § 103(a)

Claims 1 to 5, 7 to 13, 15, and 16 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Werner et al. and Flower. It is

respectfully submitted that the combination of Werner et al. and Flower does not render these claims unpatentable for at least the following reasons.

As an initial matter, claims 2, 7, 10, 11, 15, and 16 have been canceled herein without prejudice, thereby rendering moot the present rejection with regard to claims 2, 7, 10, 11, 15, and 16.

Claim 1 relates to a brush seal for sealing a rotor with respect to a stator. As amended herein without prejudice, claim 1 recites, *inter alia*, bristles including free ends oriented toward a first one of the rotor and the stator, and a bristle housing, the bristles fastened in the bristle housing, the bristle housing press-fit in an axial space between a fastening element and a second one of the rotor and the stator, the bristle housing press-fit on the second one of the rotor and the stator against movement in a radial direction relative to the second one of the rotor and the stator, the bristle housing including a cover plate having an outer side surface arranged on a first axial side of the bristles and an axial section that extends axially from the outer side surface in an axial direction away from the bristles to a free end, a supporting plate having an inner side surface arranged on a second axial side of the bristles opposite the first axial side, and a circumferential section that extends from the inner side surface in the axial direction from the second axial side of the bristles to the first axial side of the bristles and axially beyond the free end of the cover plate to a flanged section, the flanged section projecting radially inwardly beyond the free end of the cover plate so as to form an undercut between the flanged section, the free end, and the outer side surface, the bristles being fastened in the bristle housing between the inner side surface and the outer side surface. It is noted that an undercut between a flanged section, a free end, and an outer side surface may allow, for example, an appropriately designed tool to engage the undercut when the brush seal is removed from its seat in a stator, thereby allowing removal for maintenance or repair without any damage. Specification at page 9, lines 25 to 30. Support for this amendment may be found, for example, at Figures 4 and 5 and at page 10, lines 6 to 29, which states in part:

> [B]rush seal 1 . . . is held in a seat in a stator configured as a housing 9 and seals off an annular gap relative to a rotor 10 having a circumferential surface U between a space of higher pressure P1 and a space of low pressure P2. The brush seal 1 includes bristles 8 held in a bristle housing 2. The bristle housing 2 includes a cover plate 3 and a supporting plate 4, on which the bristles 8 are

> supported . . . . The bristle housing 2 includes a side surface 6 facing toward the space of higher pressure P1, a side surface 7 facing toward the space of low pressure P2, and a circumferential surface 5. In order to facilitate the removal of the brush seal 1 from its seat on the stator 9, the cover plate 3 includes an axial section 17 with a free end 18. The supporting plate 4 forming the circumferential surface 5 of the bristle housing 2 includes a flanged section 19 which encloses the free end 18 of the axial section 17 of the cover plate 3 while forming the bristle housing 2. With its free end 20, the flanged section 19, while forming an undercut 21, projects radially beyond the free end 18 of the axial section 17 of the cover plate 3, so that the brush seal 1 may be removed from its seat on the stator 9 in a simple manner without damage when using an appropriate tool.

As amended herein without prejudice, claim 1 further recites an integral projection provided on the supporting plate and a recess provided on one of the rotor, the stator and the fastening element, wherein the integral projection and the recess are configured to interact with each other in a positive-locking manner to maintain the press-fit against movement in a radial direction and to provide definite positioning of the bristle housing so as to prevent relative rotation and reversed mounting of the entire bristle housing. Support for this amendment may be found, for example, at originally filed claims 2 and 7.

Applicants respectfully submit that the combination of Werner et al. and Flower does not disclose, or even suggest a brush seal with a cover plate having an outer side surface arranged on a first axial side of the bristles and an axial section that extends axially from the outer side surface in an axial direction away from the bristles to a free end, a supporting plate having an inner side surface arranged on a second axial side of the bristles opposite the first axial side, and a circumferential section that extends from the inner side surface in the axial direction from the second axial side of the bristles to the first axial side of the bristles and axially beyond the free end of the cover plate to a flanged section, the flanged section projecting radially inwardly beyond the free end of the cover plate so as to form ***an undercut between the flanged section, the free end, and the outer side surface***. Therefore, it is respectfully submitted that the combination of Werner et al. and Flower does not disclose, or even suggest, all of the features recited in claim 1. Accordingly,

Applicants respectfully submit that the combination of Werner et al. and Flower does not render unpatentable claim 1.

Claims 3 to 5, 8, 9, 12, and 13 ultimately depend from claim 1 and therefore include all of the features recited in claim 1. It is therefore respectfully submitted that the combination of Werner et al. and Flower does not render unpatentable these dependent claims for at least the same reasons set forth above in support of the patentability of claim 1.

In view of the foregoing, withdrawal of this rejection is respectfully requested.

IV. Rejection of Claims 6, 8, and 9 Under 35 U.S.C. § 103(a)

Claims 6, 8, and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Werner et al., Flower and U.S. Patent No. 6,106,190 ("Nakamura et al."). It is respectfully submitted that the combination of Werner et al., Flower, and Nakamura et al. does not render unpatentable these claims for at least the following reasons.

As an initial matter, claim 6 has been canceled herein without prejudice, thereby rendering moot the present rejection with regard to claim 6.

Claims 8 and 9, as amended herein without prejudice, depend from claim 1 and therefore include all of the features recited in claim 1. As more fully set forth above, the combination of Werner et al. and Flower does not disclose, or even suggest, all of the features recited in claim 1. Nakamura et al. are not relied upon for disclosing or suggesting the features of claim 1 not disclosed by the combination of Werner et al. and Flower. Indeed, Nakamura et al. do not disclose, or even suggest, the features of claim 1 not disclosed or suggested by the combination of Werner et al. and Flower.

In view of all of the foregoing, it is respectfully submitted that the combination of Werner et al., Flower, and Nakamura et al. does not render unpatentable the present claims. Accordingly, withdrawal of the present rejection is respectfully requested.

V. Rejection of Claim 14 Under 35 U.S.C. § 103(a)

Claim 14 was rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Werner et al., Flower, and U.S. Patent No. 5,066,025

("Hanrahan"). It is respectfully submitted that the combination of Werner et al., Flower, and Hanrahan does not render unpatentable these claims for at least the following reasons.

Claim 14 depends from claim 1 and therefore include all of the features recited in claim 1. As more fully set forth above, the combination of Werner et al. and Flower does not disclose, or even suggest, all of the features recited in claim 1. Hanrahan is not relied upon for disclosing or suggesting the features of claim 1 not disclosed by the combination of Werner et al. and Flower. Indeed, Hanrahan does not disclose, or even suggest, the features of claim 1 not disclosed or suggested by the combination of Werner et al. and Flower.

In view of all of the foregoing, it is respectfully submitted that the combination of Werner et al., Flower, and Hanrahan does not render unpatentable the present claims. Accordingly, withdrawal of the present rejection is respectfully requested.

VI. New Claim 17

New claim 17 has been added. It is respectfully submitted that new claim 17 adds no new matter and is fully supported by the present application, including the Specification. Support may be found, for example, at page 10, lines 6 to 29 of the Specification and at originally filed claim 6. New claim 17 recites various features that are analogous to features recited in claim 1. As such, it is respectfully submitted that new claim 17 is allowable for at least the reasons set forth above in support of the patentability of claim 1, at least to the extent of the analogous features.

VII. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

Date: September 10, 2007

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